Plungers - Overview

**Ball Plungers**
As the tip ball strikes, it can be used for tentative locating the workpiece or indexing.

<table>
<thead>
<tr>
<th>Type</th>
<th>Economy</th>
<th>Standard</th>
<th>Roller</th>
<th>Load Adjustable</th>
<th>Plastic</th>
<th>Fine Thread</th>
<th>Short</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>P.1784</td>
<td>P.1785</td>
<td>P.1786</td>
<td>P.1787</td>
<td>P.1788</td>
<td>P.1789</td>
<td>P.1787</td>
<td>P.1788</td>
</tr>
</tbody>
</table>

**Features**
- By moving the hexagon socket, it prevents the making parts from being disengaged.
- By compressing the inner spring, the load can be adjustable.
- Can be adjusted for the plastic body.
- Some products have color marked hex socket for product identification.
- Fine threads provide high tensile strength.
- The overall length is shorter than conventional products, it can be used in the limited space.

**Roller Plungers**
As the overall length is shorter than that of ball plungers, it is suitable for positioning of sliding workpieces.

<table>
<thead>
<tr>
<th>Type</th>
<th>Compact</th>
<th>Surface Type</th>
<th>Hex Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>P.1777</td>
<td>P.1778</td>
<td>P.1779</td>
</tr>
</tbody>
</table>

**Features**
- Can be mounted to the plate.
- Can be used with special heads.
- Can be used with special heads.

**Spring Plungers**
The tip bearing stroke is longer than that of ball plungers, it is suitable for positioning of sliding workpieces.

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
<th>Short</th>
<th>Compact</th>
<th>Surface Type</th>
<th>Long</th>
<th>Flat</th>
<th>Flanged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>P.1771</td>
<td>P.1773</td>
<td>P.1774</td>
<td>P.1775</td>
<td>P.1776</td>
<td>P.1777</td>
<td>P.1778</td>
</tr>
</tbody>
</table>

**Features**
- Can be mounted to the plate.
- Can be used with special heads.
- Can be used with special heads.

**Indexing Plungers**
The pin shaped heads make the plunger useful for pushing the workpiece, or used as stoppers. The pin can be pushed in/out manually by using a knob or lever. Suitable for tentative workpiece positioning.

<table>
<thead>
<tr>
<th>Type</th>
<th>Knobless</th>
<th>Lever Type</th>
<th>Push Type</th>
<th>Plate Mount Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>P.1784</td>
<td>P.1785</td>
<td>P.1786</td>
<td>P.1787</td>
</tr>
</tbody>
</table>

**Features**
- Can be used on limited spaces.
- Fine screws can be operated by one finger.
- Can be used with limited spaces.

**Ball Lock Pins**
The pins and their side bolts can smoothlly lock and fix the workpiece.

<table>
<thead>
<tr>
<th>Type</th>
<th>Spring</th>
<th>Push Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>P.1788</td>
<td>P.1789</td>
</tr>
</tbody>
</table>
## Ball Plungers
### Economy / Standard

#### Features:
- By omitting heat treatment, wrench slot and thread locking treatment, overwhelmingly low price is achieved.

#### Economy

### Stainless Steel / Roller / Load Adjustable

#### Features:
- No Slit for a wrench on the tip. It can be installed only by using a hex socket.
- Thread locking treatment not applied.

### Load Adjustable

#### Features:
- By moving the nut for compressing the inner spring, the load can be adjusted freely.
### Press Fit Plungers / Ball Buttons

#### Standard / Roller

<table>
<thead>
<tr>
<th>Type</th>
<th>Body Diameter</th>
<th>Ball Diameter</th>
<th>Spring Diameter</th>
<th>Operating Temperature</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Load</td>
<td>PPSSN</td>
<td>8</td>
<td>5.5</td>
<td>0.8</td>
<td>-10°C to -120°C</td>
</tr>
<tr>
<td>Heavy Load</td>
<td>PPSSR</td>
<td>9</td>
<td>6.5</td>
<td>1.3</td>
<td>-30°C to 80°C</td>
</tr>
</tbody>
</table>

#### Recommended Diameter of Mounting Hole

- Recommended Diameter of Mounting Hole D
- Use adhesive to prevent loosening.

#### Features

- Has a ball bearing on the tip.
- Linear Guide

### Roller Plungers

#### Compact / Surface Mount / Hex Screw

<table>
<thead>
<tr>
<th>Type</th>
<th>Features</th>
<th>Main Body</th>
<th>Pin</th>
<th>Bushing</th>
<th>Bearing Shaft</th>
<th>Spring</th>
<th>Accessory (Nut x2 pcs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBPU</td>
<td>Has a ball bearing on the tip.</td>
<td>Main Body</td>
<td>Pin</td>
<td>Bushing</td>
<td>Bearing Shaft</td>
<td>Spring</td>
<td>Accessory (Nut x2 pcs.)</td>
</tr>
</tbody>
</table>

#### Surface Mount

- The combination structure of the main ball and the sub balls helps smooth rotation of the ball.

#### Features

- The stroke is longer (5~10mm) than that of ball plungers (0.2~2.5mm).
- With rolling mechanics at the tip, this product is suitable for the position setting of slider plate or indexing for rotating table.
Spring Plungers

Steel

Load Category | Type | Body Tip | Nose Tip | Spring Operating | Temperature
--- | --- | --- | --- | --- | ---
Light Load | PJL | Plastic | Plastic | Plastic | -30~80°C
Ultra Light Load | PJLW, PJLK | Plastic | Plastic | Plastic | -30~80°C

Features:
- Plastic Tip
- Movable Object
- Stop Pin
- Flathead Screwdriver
- Thread Locking Treatment is not provided on SS and BK.

Material: EN 1.1191 Equiv.
Surface Treatment: Black Oxide
Temp: 27~35HRC

Stainless Steel

Load Category | Type | Body Tip | Nose Tip | Spring Operating | Temperature
--- | --- | --- | --- | --- | ---
Light Load | PJLW, PJLK | Plastic | Plastic | Plastic | -30~80°C
Ultra Light Load | PJLW, PJLK | Plastic | Plastic | Plastic | -30~80°C

Features:
- Stainless Steel
- Thread Locking Treatment
- Material: EN 1.4568 Equiv.
- Surface Treatment: Electroless Nickel Plating
- Hardness: 57~63HRC

Unit Price

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Light Load</th>
<th>Ultra Light Load</th>
<th>Heavy Load</th>
<th>Extra Heavy Load</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PJLW</td>
<td>0.8</td>
<td>1.0</td>
<td>8.0</td>
<td>15.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

For details of spring plungers with a switch, see P2167.

For orders larger than indicated quantity, please request a quotation.

Material: EN 1.1191 Equiv.
Surface Treatment: Black Oxide
Temp: 27~35HRC

Material: EN 1.4568 Equiv.
Surface Treatment: Electroless Nickel Plating
Hardness: 57~63HRC

Features:
- Steel and Plastic Tip
- Movable Object
- Stop Pin
- Flathead Screwdriver
- Thread Locking Treatment

Unit Price

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Light Load</th>
<th>Ultra Light Load</th>
<th>Heavy Load</th>
<th>Extra Heavy Load</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PJLW</td>
<td>0.8</td>
<td>1.0</td>
<td>8.0</td>
<td>15.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
### Steel Short Spring Plungers

<table>
<thead>
<tr>
<th>Load Category</th>
<th>Type</th>
<th>Body</th>
<th>Pin</th>
<th>Spring</th>
<th>Timing</th>
<th>Material</th>
<th>Hardness</th>
<th>Temperature</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>SPRX</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~260°C</td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>SPRY</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~260°C</td>
<td></td>
</tr>
</tbody>
</table>

**Features:**
- Shorter in dimensions by 30~50% compared to the conventional products. Can be used in the limited space.
- Extra Heavy Load Type is available from M4 size.
- Thread-Lock Treatment
- Use adhesive to prevent loosening.

---

### Stainless Steel Micro Spring Plungers

<table>
<thead>
<tr>
<th>Load Category</th>
<th>Type</th>
<th>Body</th>
<th>Pin</th>
<th>Spring</th>
<th>Timing</th>
<th>Material</th>
<th>Hardness</th>
<th>Temperature</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless</td>
<td>SPRZ</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~80°C</td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>SPRK</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~80°C</td>
<td></td>
</tr>
</tbody>
</table>

**Features:**
- Suits are applied for side-mounting with a set screw.

---

### Standard / Short / Set Screw

<table>
<thead>
<tr>
<th>Load Category</th>
<th>Type</th>
<th>Body</th>
<th>Pin</th>
<th>Spring</th>
<th>Timing</th>
<th>Material</th>
<th>Hardness</th>
<th>Temperature</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>SPRJ</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~260°C</td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>SPRM</td>
<td>Black</td>
<td>Poly</td>
<td>-</td>
<td>-</td>
<td>55HRC~</td>
<td>55HRC~</td>
<td>-30~260°C</td>
<td></td>
</tr>
</tbody>
</table>

**Features:**
- Suits are applied for side-mounting with a set screw.
- The D-Dimension tolerance of the set screw part is D1.
### Micro Stroke Pins / Stroke Pins

**Features:** Suited for widening or bonding electronic parts on a circuit board.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stroke S</th>
<th>Type</th>
<th>Pin Main Body</th>
<th>Pin Spring</th>
<th>Stroke Tip</th>
<th>Pin End</th>
<th>Material</th>
<th>Surface Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPPL</td>
<td></td>
<td></td>
<td>Polyacetal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPPHA</td>
<td></td>
<td></td>
<td>Polyacetal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- **Stroke S**
  - Min. 1.5 mm, Max. 3.0 mm
  - Stroke range: 0 to 2.5 mm
- **Material:** Polyacetal
- **Surface Treatment:** Black Oxide

**Specifications:**
- **Material:** EN 1.1191
- **Type:** SPPL
- **Applicable to:** M2 only
- **Quantity:** 10~50 pcs.
- **Volume Discount Rate:** 10%
- **Allowable Tightening Torque:** M2: 0.39 N·m, M3: 3.43 N·m
- **Hardeness:** 57~63 HRC
- **Surfaced Treatment:** Electroless Nickel Plating

### Spring Plungers / Long Sleeve Plungers

**Tapped Tip**

**Features:** Stop Pins (P1739) or Timbre Pushers (P1 - 1553) can be mounted on the tip.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stroke S</th>
<th>Type</th>
<th>Pin Main Body</th>
<th>Pin Spring</th>
<th>Stroke Tip</th>
<th>Pin End</th>
<th>Material</th>
<th>Surface Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PJLTP</td>
<td></td>
<td></td>
<td>Polyacetal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PJPHT</td>
<td></td>
<td></td>
<td>Polyacetal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- **Stroke S**
  - Min. 5.5 mm, Max. 12 mm
  - Stroke range: 0 to 9 mm
- **Material:** Polyacetal
- **Surface Treatment:** Black Oxide

**Specifications:**
- **Material:** JIS-SWP-B
- **Type:** PJLTP
- **Applicable to:** M2 only
- **Quantity:** 10~50 pcs.
- **Volume Discount Rate:** 10%
- **Allowable Tightening Torque:** M2: 0.39 N·m, M3: 3.43 N·m
- **Hardeness:** 57~63 HRC
- **Surfaced Treatment:** Electroless Nickel Plating

**Features:** As a long pin-guide is used, the structure of this plunger is strong enough to bear the diagonal load.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stroke S</th>
<th>Type</th>
<th>Pin Main Body</th>
<th>Pin Spring</th>
<th>Stroke Tip</th>
<th>Pin End</th>
<th>Material</th>
<th>Surface Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLPN</td>
<td></td>
<td></td>
<td>Polyacetal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- **Stroke S**
  - Min. 5.5 mm, Max. 12 mm
  - Stroke range: 0 to 9 mm
- **Material:** Polyacetal
- **Surface Treatment:** Black Oxide

**Specifications:**
- **Material:** JIS-SWP-B
- **Type:** GLPN
- **Applicable to:** M2 only
- **Quantity:** 10~50 pcs.
- **Volume Discount Rate:** 10%
- **Allowable Tightening Torque:** M2: 0.39 N·m, M3: 3.43 N·m
- **Hardeness:** 57~63 HRC
- **Surfaced Treatment:** Electroless Nickel Plating

**Features:**
- **Bushing:** Built-in plungers specialized in holding. The tip can be ordered separately.
- **Pin End:**
  - **Part Number:** SPPL, SPPHA
  - **Material:** Polyacetal
  - **Surface Treatment:** Black Oxide
  - **Hardness:** 57~63 HRC
  - **Surface Treatment:** Electroless Nickel Plating
### Spring Plungers
#### With Hex Socket Hole / Hex Nose

**Features:** As it can be fixed with a hex wrench from the top, no dedicated wrench is required.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S</th>
<th>d</th>
<th>L</th>
<th>B</th>
<th>For Light Load N (H)</th>
<th>For Heavy Load N (H)</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>30 30 30 30 30 30 30 30</td>
<td>30 30 30 30 30 30 30 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>35 35 35 35 35 35 35 35</td>
<td>35 35 35 35 35 35 35 35</td>
<td></td>
</tr>
</tbody>
</table>

**Thread Locking Treatment** is where anaerobic thread locking compound is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when resuming.

Do not use the rear hex socket at the time of resuming or removing.

---

### Spring Plungers
#### Flat Tip, For Inclined Surface, Flanged

**Features of PJHZ**
- Special structure with high abrasion resistance and seizing resistance enables the use on inclines.
- Angle: 0° to 30°
- Fine Tip, For Inclined Surface, Flanged

**Test Conditions**
- Press Machine: 20 TON Crank Press
- Cyclic Speed: 1500PM
- Installation Angle: ±10°
- Lubrication: Oil-Free

**For Inclined Surface**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S</th>
<th>d</th>
<th>L</th>
<th>B</th>
<th>For Light Load N (H)</th>
<th>For Heavy Load N (H)</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PJHZ</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8 3 8 3 8 3 8 3 8 3</td>
<td>8 3 8 3 8 3 8 3 8 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10 5 10 5 10 5 10 5</td>
<td>10 5 10 5 10 5 10 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>12 7.5 12 7.5 12 7.5</td>
<td>12 7.5 12 7.5 12 7.5</td>
<td></td>
</tr>
</tbody>
</table>

**Features:** Flat tip, for inclined surface, flanged, suitable for use on inclines.

**Press Machine:** 20 TON Crank Press

Cyclic Speed: 1500PM

Installation Angle: ±10°

Lubrication: Oil-Free

- **Thread Locking Treatment:** Anaerobic thread locking compound is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when resuming.

Do not use the rear hex socket at the time of resuming or removing.

---

### Spring Plungers
#### Spring Plungers

**Features:** The flange makes exact height adjustment.

**Thread Locking Treatment:** Anaerobic thread locking compound is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when resuming.

Do not use the rear hex socket at the time of resuming or removing.

---

### Spring Plungers
#### Spring Plungers

**Features:** As it can be fixed with a hex wrench from the top, no dedicated wrench is required.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S</th>
<th>d</th>
<th>L</th>
<th>B</th>
<th>For Light Load N (H)</th>
<th>For Heavy Load N (H)</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>30 30 30 30 30 30 30 30</td>
<td>30 30 30 30 30 30 30 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>35 35 35 35 35 35 35 35</td>
<td>35 35 35 35 35 35 35 35</td>
<td></td>
</tr>
</tbody>
</table>

**Thread Locking Treatment** is where anaerobic thread locking compound is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when resuming.

Do not use the rear hex socket at the time of resuming or removing.

---
### Indexing Plungers

**Standard**

- **Features:** Alteration of tip shapes makes it possible to use the product as the application demands.

- **M dimensions with “L”** have longer strokes compared to the conventional products.

- **Returning Rest Position**
  - For M=8 and 8L, the pin hardness is 40~45HRC.

- **Spherical, Tapered, Flat**
  - Shape

- **Features:** Alteration of tip shapes makes it possible to use the product as the application demands.

- **Part Number**
  - **Type:** M
  - **Material:**
    - EN 1.0715
    - EN 1.1191
    - EN 1.4568

- **Thread**
  - See below

- **Material**
  - EN AW-2017
  - 90° Rotation
  - 90° Rotation

- **Surface Treatment**
  - Black Oxide
  - Black Anodize

- **Hardness**
  - 45HRC~50HRC
  - 50~60HRC

- **Material**
  - EN 1.0715
  - EN 1.1191
  - EN 1.4568

### Indexing Plungers

**Flanged / Tapped Tip**

- **Features:** The flanges enable the indexing plunger to be adjusted to right or left.

- **Part Number**
  - **Type:** M
  - **Material:**
    - EN AW-2017
    - 90° Rotation
    - 90° Rotation

- **Thread**
  - See below

- **Material**
  - EN AW-2017
  - 90° Rotation
  - 90° Rotation

- **Surface Treatment**
  - Black Oxide
  - Black Anodize

- **Hardness**
  - 45HRC~50HRC
  - 50~60HRC

- **Material**
  - EN AW-2017
  - 90° Rotation
  - 90° Rotation

### Features of the Returning Type and Rest Position Type

1. In normal conditions, the tip protrudes.
2. When pulling up the knob, the tip retracts.
3. When releasing the knob, the internal spring returns the plunger to the protruding position.

- **Rest Position**
  - In normal conditions, the tip protrudes.
  - When pulling up the knob, the tip retracts.
  - When relaxing the knob, the internal spring returns the plunger to the protruding position.

- **90° Rotation**
  - 90° Rotation

### Table

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Spherical</td>
<td></td>
</tr>
<tr>
<td>Tapped</td>
<td></td>
</tr>
<tr>
<td>Flanged</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Spherical</td>
<td></td>
</tr>
<tr>
<td>Tapped</td>
<td></td>
</tr>
<tr>
<td>Flanged</td>
<td></td>
</tr>
</tbody>
</table>

### Diagrams

- [Diagram](image1)
- [Diagram](image2)

---

*Notes:*
- All dimensions are in millimeters.
- Dimensions with “L” have longer strokes compared to the conventional products.
- See below for threaded sizes and pitches for M=8 and 16.
## Indexing Plungers

### Short Threaded, Aluminum/Plastic Knob

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>S</th>
<th>L1</th>
<th>L2</th>
<th>Load (N) min</th>
<th>Mass (g) min</th>
<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXSA15</td>
<td>12</td>
<td>1.5</td>
<td>25</td>
<td>19.6</td>
<td>6</td>
<td>45</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>17</td>
</tr>
</tbody>
</table>

### Compact / Long

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>S</th>
<th>L1</th>
<th>L2</th>
<th>Load (N) min</th>
<th>Mass (g) min</th>
<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMXSB10</td>
<td>10</td>
<td>1.5</td>
<td>24</td>
<td>19</td>
<td>8</td>
<td>6</td>
<td>31</td>
<td>7</td>
<td>17</td>
<td>3.5</td>
</tr>
</tbody>
</table>

### Features:
- Has shorter length by 2/3 compared to the general indexing plungers. Can be used in narrow space.
- Having longer mounting threads, the plunger can be mounted to a thick plate.

## Construction Diagram

### Features:
- Has shorter length by 2/3 compared to the general indexing plungers. Can be used in narrow space.
- Having longer mounting threads, the plunger can be mounted to a thick plate.

### Load (N) Unit Price

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
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<th>S</th>
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<th>L2</th>
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<th>Mass (g) min</th>
<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXAL8</td>
<td>1.0</td>
<td>15</td>
<td>11.5</td>
<td>4</td>
<td>4</td>
<td>20</td>
<td>22</td>
<td>5</td>
<td>20</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>S</th>
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<th>Mass (g) min</th>
<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXPKL16L</td>
<td>1.0</td>
<td>18</td>
<td>13.5</td>
<td>5</td>
<td>5</td>
<td>20</td>
<td>22</td>
<td>5</td>
<td>20</td>
<td>4</td>
</tr>
</tbody>
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<th>S</th>
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<th>L2</th>
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<th>Mass (g) min</th>
<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXAL8</td>
<td>1.5</td>
<td>21</td>
<td>16.2</td>
<td>8</td>
<td>8</td>
<td>30</td>
<td>36</td>
<td>8</td>
<td>27</td>
<td>6</td>
</tr>
</tbody>
</table>

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<tr>
<th>Part Number</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>S</th>
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<th>L2</th>
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<th>Mass (g) max</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXPKL16L</td>
<td>1.5</td>
<td>20</td>
<td>15.7</td>
<td>8</td>
<td>8</td>
<td>30</td>
<td>36</td>
<td>8</td>
<td>27</td>
<td>6</td>
</tr>
</tbody>
</table>

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**Note:** For M8 and M10, the pin hardness is 50 - 60 HRC.
Indexing Plungers
Pilot, Precision Grade / Press Fit / Knobs for Press Fit Plungers

Features: Clearance of the pin is 0.035 or less.

- Pilot, Precision
- Pressing
- Retaining
- Light Load
- Normal Load
- Heavy Load
- Rest Position

Part Number

Pitch

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Pitch</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>L1</th>
<th>L2</th>
<th>Load (N)</th>
<th>Load (N)</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXPP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Features:
- Clearance of the pin part is 0.035 or less, which helps to prevent backlash.
- M dimensions with "L" have longer strokes compared to the conventional products.
- Helps to prevent backlash.
- With Lock Nut

Press Fit

- SXPP
- SXNP
- SXNPB
- SXNAB

Knobs for Press Fit Plungers

- NSXP
- NSPP

Indexing Plungers
Knobless Standard / Knobless Large Screws for Mounting Knobs

Features: The most suitable knob for each purpose can be mounted.

- Knobless Standard

Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>L1</th>
<th>L2</th>
<th>Load (IN)</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXPP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Features:
- Screws for Mounting Knobs (Stainless Steel) are larger by 1 size than the Standard Type.

- Knobless Large Screws for Mounting Knobs

Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>D1</th>
<th>B</th>
<th>L1</th>
<th>L2</th>
<th>Load (IN)</th>
<th>Unit Price</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indexing Plungers
Coarse/Fine Thread Lever

**Features:**
The pin can be operated by turning the lever making it usable in limited spaces. The lever can be locked by the notch.

<table>
<thead>
<tr>
<th>Type</th>
<th>Coarse Thread</th>
<th>Fine Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Size</td>
<td>from 8 to 16</td>
<td>from 8 to 16</td>
</tr>
<tr>
<td>Load (N)</td>
<td>min. max.</td>
<td>min. max.</td>
</tr>
<tr>
<td>Mass (g)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Price</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indexing Plungers
Switch Lever Type / Push Type / Plate Mount Type

**Features:**
The ON/OFF state can be visually recognized by the indication on the lever.

<table>
<thead>
<tr>
<th>Type</th>
<th>Switch Lever Type</th>
<th>Push Type</th>
<th>Plate Mount Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td>M min. max.</td>
<td></td>
<td></td>
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<tr>
<td>Size</td>
<td>from 8 to 16</td>
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<td></td>
</tr>
<tr>
<td>Load (N)</td>
<td>min. max.</td>
<td></td>
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<td>Mass (g)</td>
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<td></td>
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<tr>
<td>Unit Price</td>
<td></td>
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</table>

Features:
The ON/OFF state can be visually recognized by the indication on the lever.

Push the button to turn the status "ON" (button color is black), push it again to return the status to "OFF" (button color is black and white).

Features:
The button operation is possible, which significantly reduces the number of operations and the applied load.

Features:
The button operation is possible, which significantly reduces the number of operations and the applied load.

One finger operation is possible, which significantly

Features:
The button operation is possible, which significantly reduces the number of operations and the applied load.

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Indexing plungers
Fine Thread / Coarse Thread

### Fine Thread

- **Screw**
- **Returning**
- **Rest Position**
- **Knob**
- **Main Body**
- **Pin**
- **Spring**
- **[Lock Nut]**

**Thread Type**
- PMX: Fine Thread
- PXY: Fine Thread / Coarse Thread
- PXK: Fine Thread
- PXYK: Fine Thread

**Material**
- EN 1.4125 Equiv.
- EN 1.4305 Equiv.
- EN 1.0715 Equiv.
- EN 1.1191 Equiv.

**Dimensions**
- **L**: 10 to 25
- **B**: 8
- **D**: 1.5

**Load (N)**
- **BLPS**: 0.9 - 1.6
- **BLPF**: 9 - 50

**Features**
- Configurable
- Selectable

---

**Ball Lock Pins**
Spring Type / Push Type

### Ball Lock Pins - Spring Type

- **Type**
- **Ball Pin**
- **Pin**
- **Lock Nut**
- **Handle**
- **Ring**

**Part Number**
- BLPS
- BLPF

**Unit Price**

---

**Features**
- Locks with the spring force. Priced at approx. 1/3 of the Push Type.

---

**Selection**
- **B**: 5 to 10
- **E**: 12 to 50

**Load (N)**
- **BLPS**: 9 to 50
- **BLPF**: 9 to 50

**Recommended**
- **Dimensions**
- **Load (N)**
- **Mass (g)**

---

Since the Coarse Thread Type (PMX, PMXK, PMXY, PMXYK) are thin threaded, do not exceed the tightening torques shown in the table to the right.

---

*Features of the Returning Type and Rest Position Type (L1)**

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*Images of Ball Lock Pins*